IN THE CLAIMS:

Please amend the claims as follows. The claims are in the format required by 35 C.F.R. § 1.121.

1. (Currently amended) A multi-channel audio amplifier system comprising:

a plurality of audio amplifier channels, wherein each channel includes

a sample rate converter configured to receive samples of an input audio data stream, store the samples in an input buffer, retrieve samples from the input buffer, and convert the samples to a re-sampled audio data stream, and

a buffer management unit coupled to the input buffer and configured to maintain a write pointer indicating a position in the input buffer to which a next sample will be written and a read pointer indicating a position in the input buffer from which a next sample will be read, wherein the buffer management unit is configured to determine an actual difference between the values of the read and write pointers, wherein the buffer management unit is further configured to control a rate at which samples are read ~~reads~~ from the input buffer to achieve a target difference between the values of the read and write pointers;

wherein for a first one of the channels, the target difference comprises a predetermined value; ~~and~~

wherein for the remainder of the channels, the target difference comprises the actual difference between the values of the read and write pointers of the first one of the channels; and

wherein the buffer management unit is configured to read samples from the input buffer in an order in which the samples were written to the input buffer without skipping or re-reading any of the samples stored in the input buffer.

2. (Original) The system of claim 1, further comprising an interconnect between the sample rate converter of the first one of the channels and the remainder of the channels, wherein the interconnect conveys the actual difference between the values of the read and write pointers of the first one of the channels to the remainder of the channels.

3. (Original) The system of claim 1, wherein each sample rate converter further comprises a phase selection unit coupled to the buffer management unit, wherein a phase output signal of the phase selection unit is transmitted to the buffer management unit and wherein the phase output signal controls reads from the input buffer.

4. (Original) The system of claim 3, wherein each sample rate converter further comprises a rate estimator counter, wherein the rate estimator counter is configured to provide a sample rate count to a low pass filter, wherein the low pass filter is configured to filter the sample rate count and to provide the filtered sample rate count to the phase selection unit, and wherein the phase selection unit is configured to generate the phase output signal based upon the filtered sample rate count.

5. (Original) The system of claim 4, wherein the buffer management unit is configured to transmit an error signal to the low pass filter and wherein the low pass filter is configured to use the error signal as an offset to the sample rate count.

6. (Original) The system of claim 5, wherein each sample rate converter further comprises a polyphase coefficient interpolator configured to receive the phase output signal from the phase selection unit and to generate a set of interpolated filter coefficients based on the phase output signal.

7. (Original) The system of claim 5, wherein each sample rate converter further comprises a convolution unit configured to receive samples from the input buffer and sets of filter coefficients from the polyphase coefficient interpolator and to convolve the samples with the sets of filter coefficients.

8. (Currently amended) A method comprising:

determining a difference between values of a read pointer and a write pointer in each of a plurality of buffers;

controlling a first rate at which samples are read ~~reads~~ from a first one of the buffers to drive the difference between the corresponding read and write pointers to a predetermined value; ~~and~~

controlling rates at which samples are read ~~reads~~ from each of the remaining buffers to drive the difference between the corresponding read and write pointers to the difference between the read and write pointers of the first buffer; and

reading samples from the input buffer in an order in which the samples were written to the input buffer without skipping or re-reading any of the samples stored in the input buffer.

9. (Original) The method of claim 8,

wherein the method is implemented in a multi-channel audio amplification system;

wherein each buffer comprises an input buffer in a sample rate converter for one of a plurality of channels; and

wherein the method further comprises, for each channel, writing samples of a corresponding input audio data stream to the buffer, reading samples out of the buffer, convolving the samples with sets of polyphase filter coefficients, and producing samples of an output audio data stream.

10. (Original) The method of claim 8, wherein the method is implemented in a plurality of sample rate controllers.

11. (Original) The method of claim 10, wherein the buffers comprise input buffers of the sample rate controllers.

12. (Original) The method of claim 10, wherein each sample rate controller is implemented in a channel of a multi-channel audio amplification system.

13. (Original) The method of claim 8, further comprising transmitting the difference between the read and write pointers of the first one of the buffers from a buffer management unit in the first one of the buffers to buffer management units in the remainder of the buffers.

14. (Currently amended) A system comprising:

a plurality of buffers, including a master buffer and one or more slave buffers;

wherein each buffer has a corresponding

write pointer indicating a position in the input buffer to which a next received value will be written,

read pointer indicating a position in the input buffer from which a next output value will be read, and

controller configured to determine an actual differential between the read and write pointers and to control a corresponding rate at which samples are read ~~reads~~ from the input buffer to achieve a target differential between the read and write pointers;

wherein for the master buffer, the target differential comprises a predetermined value; and

wherein for the slave buffers, the target differential comprises the actual differential between the read and write pointers of the buffer; and

further comprising a buffer management unit configured to read samples from the input buffer in an order in which the samples were written to the input buffer without skipping or re-reading any of the samples stored in the input buffer.

15. (New) A multi-channel audio amplifier system comprising:

a plurality of audio amplifier channels, wherein each channel includes

a sample rate converter configured to receive samples of an input audio data stream, store the samples in an input buffer, retrieve samples from the input buffer, and convert the samples to a re-sampled audio data stream, and

a buffer management unit coupled to the input buffer and configured to maintain a write pointer indicating a position in the input buffer to which a next sample will be written and a read pointer indicating a position in the input buffer from which a next sample will be read, wherein the buffer management unit is configured to determine an actual difference between the values of the read and write pointers, wherein the buffer management unit is further configured to control reads from the input buffer to achieve a target difference between the values of the read and write pointers;

wherein for a first one of the channels, the target difference comprises a predetermined value; and

wherein for the remainder of the channels, the target difference comprises the actual difference between the values of the read and write pointers of the first one of the channels;

wherein each sample rate converter includes a phase selection unit coupled to the buffer management unit, wherein a phase output signal of the phase selection unit is transmitted to the buffer management unit and wherein the phase output signal controls reads from the input buffer.

16. (New) The system of claim 15, wherein each sample rate converter further comprises a rate estimator counter, wherein the rate estimator counter is configured to provide a sample rate count to a low pass filter, wherein the low pass filter is configured to filter the sample rate count and to provide the filtered sample rate count to the phase selection unit, and wherein the phase selection unit is configured to generate the phase output signal based upon the filtered sample rate count.

17. (New) The system of claim 16, wherein the buffer management unit is configured to transmit an error signal to the low pass filter and wherein the low pass filter is configured to use the error signal as an offset to the sample rate count.

18. (New) The system of claim 17, wherein each sample rate converter further comprises a polyphase coefficient interpolator configured to receive the phase output signal from the phase selection unit and to generate a set of interpolated filter coefficients based on the phase output signal.

19. (New) The system of claim 17, wherein each sample rate converter further comprises a convolution unit configured to receive samples from the input buffer and sets of filter coefficients from the polyphase coefficient interpolator and to convolve the samples with the sets of filter coefficients.